



Predicting Premature Birth in Early Pregnancy

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Abstract: Premature birth and prematurity are the leading causes of death among newborns. Premature birth (PR) is a threat to the health of the baby. Some newborns will require special care and hospitalization for months. The likelihood of serious complications increases in newborns born before the 28th week of pregnancy with a weight below 1500 grams. In most cases, the birth of a premature baby is an unforeseen event (1,2).

There are common risk factors for preterm birth, but preterm birth can occur in any woman, even if the entire pregnancy was flawless. Premature birth is dangerous with the development of various complications in the child in the future (7,8).

The frequency of preterm birth is 5-18% of all births, and does not tend to decrease. The share of PR from 22 to 28 weeks. accounts for 5-7%; from 29 to 34 weeks - 33-42%; from 35 to 37 weeks - 50-60%.(8,9).

In the structure of perinatal mortality, premature babies make up 70-75%. The main reasons for the death of children: intracranial hemorrhage of 3-4 degree, intrauterine infection, cardiopulmonary failure. In surviving children born with extremely low body weight, complications such as cerebral palsy, retinopathy of prematurity, bronchopulmonary dysplasia develop, which causes disability, especially at birth at 22-24 weeks. Considering the above, in modern obstetrics, it is very relevant to research predictive moments of the onset of preterm birth in early pregnancy.(3,4).

Key words: premature birth, pregnancy.

Introduction: identification of objective prognostic criteria for preterm birth in the first trimester of pregnancy.

Materials and Methods the analysis of a comprehensive examination of 100 pregnant women was carried out. Depending on the outcome of labor, three groups were formed

- the first group - 30 patients with uncomplicated pregnancy who gave birth to 30 live full-term babies;
- the first group - 30 patients with uncomplicated pregnancy who gave birth to 30 live full-term babies;
- The third group - 35 patients with early preterm labor (from 28 to 33 weeks). **Results of the study**. Pregnancy of patients of the second and third groups proceeded against the background of placental insufficiency, which was confirmed by the results of a morphological study of the succession. The exclusion criteria were cases of intrauterine infection and isthmic - cervical insufficiency. At a period of 7-10 weeks, an echographic study of the elements of the ovum and a Doppler assessment of the intensity of blood flow in the uterine arteries were carried out using the ALOKA-SSD -1700 device. The functional activity of the fetoplacental complex was determined by the level of the hormone β - hCG and the PAMG -1 protein. Analysis of the results of the study showed that in pregnant women of the first group, the shape of the ovum and the structure of the extraembryonic structures corresponded to the growth norm. The motor activity of the fetus and its heart contractions were well visualized. The resistance index (IR) of the uterine arteries corresponded to 0.74 ± 0.06 relative units, and the difference in IR values in the two uterine arteries did not exceed 10-15%. The level of PAMG-1 was 11.6 ± 0.7 ng / ml, and the level of β -hCG - 76930 ± 3500 U / ml.

In the second group, echographic signs of changes in the size and structure of the chorion, the presence of a subchorial hematoma, a sharp increase in the local tone of the uterus in the area of the chorion, asymmetry and a decrease in the intensity of blood flow in the uterine vessels were revealed. On the side of hypertonicity, IR (0.86 ± 0.05 ton.units) statistically significantly exceeded the values of IR (0.67 ± 0.04 RH.U.) on the opposite side. In this case, the difference in IR values was more than 20-25%. The functional activity of the trophoblast corresponded to the gestational norm (13.2 ± 0.9 ng / ml for PAMG-1 and 76500 ± 2150 Med / ml for hCG). In pregnant women of the third group, echographic signs of the pathological course of pregnancy were manifested in the form of thickening of the chorion and disturbances in the structure of the decidual tissue, the presence of subchorial hematoma and an increase in the tone of the myometrium (5,6).

Due to the pronounced local hypertonicity of the uterus, deformation of the ovum and an asymmetric decrease in the intensity of uterine blood flow were noted. The difference in IR values in the uterine arteries was higher than 22-25%, and IR (0.80 ± 0.04 relative units) significantly exceeded the results of the control group. A study of the functional activity of trophoblast revealed significant differences from the parameters of physiological pregnancy, which was manifested by a decrease in the level of β -hCG to 31819 ± 2780 Med / ml ($p = <0.001$) and an increase in the level of PAMG-1 to 26.9 ± 7.3 ng / ml ($p = <0.05$).

CONCLUSION. Thus, the results obtained confirmed the opinion that one of the leading causes of preterm birth is structural and functional changes in the placenta, which is formed in early pregnancy. Echographic assessment of the structure of the ovum in the early stages of gestation, combined with a functional assessment of the FPK, makes it possible to assess the severity of the development of primary placental insufficiency in a timely manner and can be a predictive criterion for determining the risk group for developing preterm labor.

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